



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/025,756	12/26/2001	Gang Xie	217646US3	1666

22850 7590 06/03/2004

OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

MARTIN, ANGELA J

ART UNIT PAPER NUMBER

1745

DATE MAILED: 06/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.	Applicant(s)	
10/025,756	XIE, GANG	
Examiner	Art Unit	
Angela J. Martin	1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 1745

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Nezu et al., U.S. Pat. No. 5,994,426.

Rejection of claim 1 drawn to a solid polymer electrolyte membrane; claim 6 drawn to a method for producing a solid electrolyte membrane.

Nezu et al., teach a solid polymer electrolyte membrane (abstract) with ion exchangeability employed in a solid polymer electrolyte fuel cell, wherein an anion group is partially combined with the solid polymer membrane (col. 14, lines 49-67 and col. 15, lines 1-20). It also teaches a method for producing the membrane wherein the anion group includes a sulfonic acid group (col. 4, lines 56-63).

Thus, the claims are anticipated.

3. Claims 2 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Nezu et al., U.S. Pat. No. 5,994,426.

Rejection of claims 2 and 7 drawn to a method for producing a solid electrolyte membrane.

Nezu et al., teach a method for producing a solid electrolyte membrane with ion exchangeability employed in a solid polymer electrolyte fuel cell comprising the step of

Art Unit: 1745

partially combining an anion group with the membrane (col. 14, lines 49-67 and col. 15, lines 1-20). It also teaches the anion group includes a sulfonic acid group (col. 4, lines 56-63).

Thus, the claims are anticipated.

4. Claims 3-5 and 8-10 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Nezu et al., U.S. Pat. No. 5,994,426.

Rejection of claims 3-5 and 8-10 drawn to a method for producing a solid electrolyte membrane.

Nezu et al., teach a method for producing a solid electrolyte membrane comprising the steps of covering a predetermined portion on a surface of a polymer substrate with a first mask to shield the predetermined portion; applying radiation to an entirety of the substrate; grafting a styrene onto a polymer in a remaining portion in the substrate not covered by the first mask; removing the first mask from substrate; and combining an anion group with the styrene on the polymer in the grafted remaining portion of the substrate (col. 4, lines 64-67 and col. 5, lines 1-8). It also teaches a method comprising the steps of applying radiation to a surface of a substrate; covering a predetermined portion in the radiated surface of the polymer substrate with a mask to shield the predetermined portion; grafting a styrene onto a polymer in a remaining portion of the substrate not covered with the mask; and combining an anion group with the styrene on the polymer in the grafted remaining portion of the substrate (col. 4, lines 41-55). It also teaches a method comprising the steps of applying radiation to substrate;

Art Unit: 1745

covering predetermined portion of radiated surface with a mask; grafting styrene onto polymer not covered with mask; removing mask; and combining anion group with styrene on polymer of a surface portion of the predetermined portion in the thickness direction (col. 4, lines 41-63). For the above methods the anion group includes a sulfonic acid group (col. 4, lines 56-63).

Thus, the claims are anticipated.

However, if the claims are not anticipated, in the alternative, they are obvious because Nezu et al., teaches the same method, although he is silent on "predetermined portion." The skilled artisan, through routine optimization, would cover a predetermined portion on a surface of a polymer substrate, in order to replicate optimum results in the method for producing a solid electrolyte membrane.

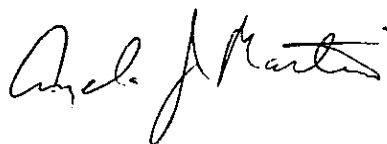
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angela J. Martin whose telephone number is 571-272-1288. The examiner can normally be reached on Monday-Friday from 9:00 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1745

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AJM

A handwritten signature in black ink, appearing to read "Angel J. Martinez". The signature is written in a cursive, flowing style with a prominent initial "A".